

**ARCHITECTURE FOR PROVIDING BLOCK-LEVEL
STORAGE ACCESS OVER A COMPUTER NETWORK**

ABSTRACT

5 A network-based storage system comprises one or more block-level storage
servers that connect to, and provide disk storage for, one or more host computers
("hosts") over logical network connections (preferably TCP/IP sockets). In one
embodiment, each host can maintain one or more socket connections to each storage
server, over which multiple I/O operations may be performed concurrently in a non-
10 blocking manner. The physical storage of a storage server may optionally be divided
into multiple partitions, each of which may be independently assigned to a particular
host or to a group of hosts. Host driver software presents these partitions to user-level
processes as one or more local disk drives. When a host initially connects to a storage
server in one embodiment, the storage server initially authenticates the host, and then
15 notifies the host of the ports that may be used to establish data connections and of the
partitions assigned to that host.

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